PRELIMINARY ASSESSMENT
REGION 9

Preparer's Name Louis Parsons Date 10-21-86

	SOURCE	INFORMATION
1. Site ID Number	CERCLIS	AZD981680242
2. Site Name	CERCLIS	PHELPS DODGE HISTORICAL SMELTER
3. Site Location	CERCLIS	HWY 92 BREWERY GULCH INTERCHANGE BISBEE, ARIZONA 85603
4. County	CERCLIS	Cochise
5. Owner (Address & Telephone #)	Cochise county assessors office	Phelps Dodge Corp. Western Operations Office 2600 N. Central (602) 234-8100 Phoenix, Az 85004
6. Operator (Address & Telephone #)	Phelps Dodge Corp	Highway 92 Bisbee, Az 85603 (602) 432-3621
7. Type of Ownership		Private
8. Status	BMNHM	inactive - the smelters have been inactive for 80+ yr
9. Source Activity	Bisbee Mining and Historical Museum (BMNM)	Smelting of Copper ores 40-54 tons of 99% copper daily from 1887-1905 this represents the product of three furnaces, from 1885(?) to 1887 two furnaces ran and before that only one.
10. Years of Operation	BMNHM Myrick Volume one	1880 - July 24, 1904
11. Facility Type		
12. Waste Type & Description	Principals of Copper Smelting, E.D. Peters McGraw-Hill, 1907 Transactions of the American Inst. of Mining Eng. Vol. XXIX 2/1899-9/1899 James Douglas, The Copper Queen Mine, Az Myrick, Arizona Railroads Vol. 1	Lead and Arsenic vapors and particulates possibly other heavy metals were disposed into the air. The smelter slag retained some heavy metals also, the ratio of lead retained by the Co slag vs that volatilized was very small. Th slag was typically used for Railroad ballast may contain more than 500ppm lead.

13. Contacts: (602) 432-3621 Jack Ladd – Chief Geologist Phelps Dodge-Bisbee
(602) 855-1206 John Beck – Center for Disease Control
(602) 432-7071 Tom Vaughan – Curator of Photography - Bisbee Mining and Historical Museum

14. Incidents: 1. Several children were found to have elevated blood Lead concentrations by ADHS Center for Disease Control (CDC) 10-28 to 11-16.
2. CDC did soil sampling from spring 86 to October 86. Located areas with high lead concentrations in soils up to ~1600ppm. Most of the high Lead concentrations were found in Old Bisbee within ½ mile of the Brewery Gulch Interchange.
3. Dr. Caldwell determined the safe level of Lead in soil to be 500ppm fall 1985.

15. Inspections (date, type, by whom, recomendations):

16. Enforcement History (list date, type of action, requirements, outcome):
None

17.a. Initial Recomendation for Further Action:
See attached

17.b. EPA Recomendation for Further Action:
NA

18. Response Termination: __ No Further Action __ Pending __ Active

Justification:
NA

	SOURCE	INFORMATION
19. Observed Release	John Beck personal contact 10-20-86	Ambient heavy metals concentrations in Bisbee may be naturally high. The four children with high blood leads may have eaten lead based paints. It is also likely that they injested lead contaminated soils One child was observed eating soil in the Museum playground.
20. Depth to Aquifer	ADWR well registry	unknown - local domestic wells in old Bisbee are about 22-60 feet deep. -P.D. has two wells in sec 15 depth 2727 and 33
21. Net Precipitation, Net Seas. rainfall & Evaporation	US dept of commerce	negative 76.56" net rainfall 17.34" evaporation 93.9" per year
22. Permeability of Unsaturated Zone		unknown
23. Physical State		solid
24. Containment (Ground Water)		N/A
25. Toxicity	USEPA HRS waste characteristics values	3 HRS score for Lead 18
26. Persistence		3
27. Waste Quantity	James Douglas, The Copper Queen Mine, Az 1899, Transactions, AIME Page 540-545	10,000 — 19,000 tons of lead was removed from the copper matte in the smelters converters during the years of operation. The lead concentration in the slag was "nil" so all of this lead was volatilized into the atmosphere
28. Ground Water Use	ADWR Well Registry Report	Mine usage some of the domestic wells in Bisbee may still be used.
29. Distance to Well	ADWR Well Registry	The municipal supply well is south of Naco more than eight miles away.
30. Population Served (Ground Water)		NA

	SOURCE	INFORMATION
31. Facility Slope	personal observation, Lou Parsons	Very steep, up to 45 degrees in places
32. 1 Year, 24 Hour Rainfall	US Dept Commerce Weather Bureau No. 86-2	38 days/yr ≥ .10" 8 days/yr. ≥ .50"
33. Distance to Surface Water		NA
34. Containment (Surface Water)		NA
35. Surface Water Use		NONE
36. Distance to Sensitive Enviro.		NA
37. Population Served (Surface Water)		NA
38. Distance to Water Intake		None
39. Reactivity		—
40. Incompatibility		—
41. Toxicity (Air)		—
42. Population within 4 Mile Radius		—
43. Land Use		

RECOMMENDATION FOR FURTHER ACTION

Sample the solids in and around Old Bisbee for heavy metals following a grid pattern. The program should be aimed at determining precisely a variety of things. First, the lead shown to be present may be associated with other heavy metals, notably arsenic. A sufficient number of samples should be analysed for most of the heavy metals so that we can determine which metals are typically present. The metals present in Bisbee may occur in the observed concentrations naturally. The second goal of the sampling program then would be to determine what concentrations are natural for Bisbee soils. Thirdly, in conjunction with the routine grid controlled sampling, individual yards should be composite sampled upon reasonable, written request, of parents with children under five (5) years old.

Any domestic well in Old Bisbee that is operational should be sampled for heavy metals.

Air sampling, at this time, would also be useful to further define the routes metals are taking into the residents bodies.

The community of Old Bisbee is very interested in this problem. As soon as any data is obtained and interpreted it should be made available in a public place i.e. the county courthouse. The data could be used by people to decide where to allow their children to play.